Feature

Shark thin soup

Increased hunting and bycatch are having a devastating effect on long-lived and slow-reproducing sharks, as a new study from the Mediterranean reveals. **Nigel Williams** reports.

It has been slow to emerge and the animals win few public friends, but the global dramatic decline in shark numbers is being revealed. In the Gulf of Mexico oceanic whitetip sharks have declined by up to 99 per cent between the 1950s and the 1990s, and numbers of individuals in coastal species of the shark family here have declined by a similar amount between 1972 and 2002. In the northwest Atlantic several large shark species have been reported to have declined by more than 75 per cent in the 15 years since 1986.

But for many other regions of the world few data on shark numbers are available. So the results of a new study from the Mediterranean are particularly alarming. Sharks here have undergone a massive decline over the last two centuries, scientists report, on the basis of a new study of historical records. Some species have shrunk by more than 99 per cent over the period, mainly due to fishing.

A team of researchers from Dalhousie University and the Italian environmental protection agency in Livorno, led by Francesco Ferretti, used fishermen's notes and archive records to plot population trends of five top predatory sharks.The study is reported in the journal *Conservation Biology*.

Sharks and their close relatives, the rays, are particularly vulnerable to over-fishing as they grow and reproduce slowly. "There is a long history of fishing in the Mediterranean, especially coastal fishing," said Ferretti. "And until recently, these species were not valuable — they were caught as bycatch by boats chasing important species such as tuna — so they were declining without anyone noticing," he said.

There are 47 species of shark found regularly in the Mediterranean, of which 20 are top predators. Fishermen tend to regard them as pests, according to records amassed by the researchers. For five of the top 20 predators, the records — from traditional tuna traps, commercial boats and fishermen using rods and lines — were good enough to show that catches had been large enough to provide evidence of a substantial decline.

The hammerhead population, they conclude, has declined by more than 99.99 per cent over the last 200 years. Records show that hammerheads largely vanished from coastal waters around 1900; in the last 20 years they have barely been seen in pelagic zones either.

The blue shark and the two mackerel sharks have also apparently vanished from coastal waters. Threshers are occasionally still caught in tuna traps but their numbers across

Disappearing: Hammerhead shark numbers in the Mediterranean have plummeted, according to a new study of historical records. (Picture: Photolibrary.)

the Mediterranean have also fallen by 99.99 per cent compared with previous numbers.

For the rest of the top 20 predators, records were not comprehensive enough to plot a trend, though declines were evident. That may be because their decline began even earlier, when records were even more sparse, the researchers believe.

"This study will hopefully contribute to a greater threat status for hammerheads and blue sharks, and other assessments in the Mediterranean," he said.

Conservationists have long campaigned for better protection for sharks and rays, which have not traditionally been considered by organisations that regulate fisheries.

But rapidly developing economies in Asia are boosting demand for shark fins as a culinary delicacy, putting sharks increasingly within fishermen's sights. A recent report from Australia found that shark fins reached a price 30 to 40 times by weight compared with the rest of the fish, making them a lucrative target.

The new Mediterranean study highlights the increasing human pressure on marine species. "In addition to large predatory sharks, cetaceans, pinnipeds, turtles and large bony fishes have declined similarly," the authors write.

Prize recognition

Conservation biologists have a tough time getting projects under way even in regions where there is considerable public support. So winning over locals where there is little conservation awareness is doubly challenging. And then to be recognised for their efforts by a key environmental prize is a major achievement. So the announcement of the Whitley Gold Award to Cagan Sekercioglu for his work at Kuyucuk Lake, in the north-eastern Kars province of Turkey, is therefore particularly welcome. The lake is a haven for birds, supporting up to 30,000 from over 160 species. It is also vital for local people who rely on it to raise the livestock, crops and fuel that help them to survive severely cold winters. It was with all these needs in mind that Sekercioglu began the Kars Biodiversity Project.

Using an approach that is new in Turkey, he and a local NGO are helping local people to see how good stewardship will raise their incomes, safeguard the lake and its species, and make the area attractive to birdwatchers and eco-tourists. Sekercioglu, a graduate of Harvard and Stanford universities who turned down a financial career to concentrate on conservation projects in his native Turkey, particularly impressed the prize judges for his leadership of the project. Progress is already evident and the community is backing efforts to win greater protection for the region, including a designation under Ramsar, the international programme to conserve wetland habitats.

Sharing the first prize was Rodrigo Hucke-Gaete from Chile who had identified a previously unknown feeding and breeding ground for the blue whale near the Corcovado Gulf in southern Chile. He is now leading a project to increase the protection of the region from pollution, invasive species, over-fishing and increased shipping. He is hoping to create a marine protection area in the region and to expand this approach to other marine regions of Chile, Latin America and Antarctica. The judges were impressed with how he had brought together fishermen, government and industry to consider his plans.

The Whitley awards have been running for 15 years and are funded by a number of private individuals and other organisations and presented in London. Sekercioglu and Hucke-Gaete will each receive £60,000 of project funding plus long-term support and the opportunity to bid for further funds from the Whitley Fund for Nature. (www.whitleyaward.org)

Nigel Williams

Brighter ahead: The red-breasted goose is one of the species benefitting from a new Turkish wetland conservation programme. (Photo: Alamy.)